Software Engineering

- The science concerned with putting computer science knowledge to practical use.
- Computer Science versus Software Engineering

Software Engineering - IEEE

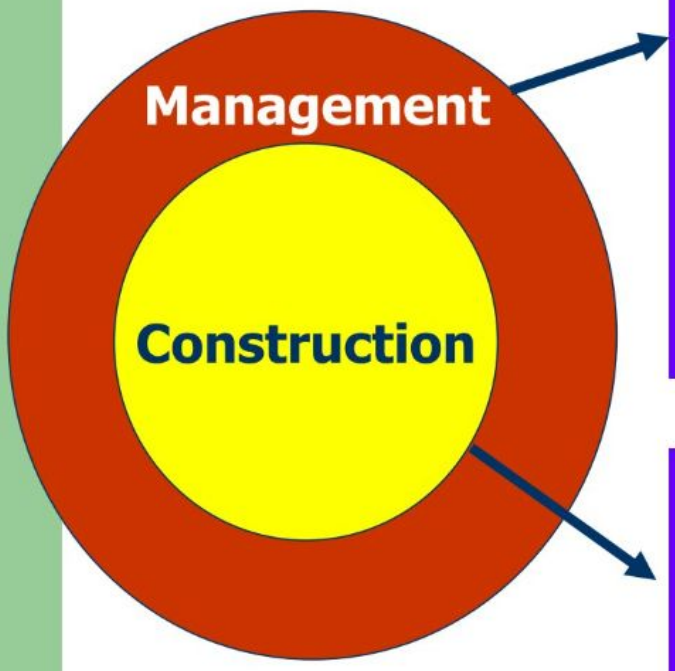
1. **The application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software; that is, the application of engineering to software.**
2. **The study of approaches as in 1.**

One of the largest efforts in Software Engineering has been the design of Ada Programming Language!

Effort Breakdown of ~10000 Projects - Capers Jones

• Project Management	8.08%
• Requirements	14.43%
• Design	11.36%
• Coding	13.50%
• SQA	30.64%
• SCM	13.02%
• Integration	6.54%
• Misc.	~3%

Software Development



project planning and management
configuration management
quality assurance
installation and training
etc.

Requirements
Design
Coding
Testing
Maintenance
etc.

Basic Activities of Software Engineering

- defining the software development process to be used
- managing the development project
- describing the intended software product
- designing the product
- implementing the product
- testing the parts of the product
- integrating the parts and testing them as a whole
- maintaining the product

The Four P's of Software Engineering

- Project – the task at hand
- People – by whom it is done
- Process – the manner it is done
- Product – the artifacts produced